

Report of the Governor's Representative Steve Diercks, Coloma, WI

Several recommendations of the GCC involve developing partnerships to achieve sustainable groundwater quantity and quality, to increase monitoring and applied research and support pro-active groundwater planning. GCC members recognize the importance of groundwater to the health of our communities, families and economy. Wisconsin's Central Sands region has become one of the most productive irrigated vegetable areas in the United States with top five rankings for potatoes, sweet corn, green beans, peas, carrots and several other specialty vegetable crops. Annual production is valued at over \$6.4 billion and the industry generates over 35,000 jobs in the area. At the same time, concerns grew over the potential impact of irrigated agriculture, climate, urbanization, and other factors on the groundwater aquifer and surface waters of the Central Sands. In response, the Wisconsin Potato and Vegetable Grower Association (WPVGA) Groundwater Task Force was formed to bring together resources and expertise to foster the sustainable use of groundwater resources. It is an example of collaboration involving GCC member agencies and the agriculture industry.

The group's diverse membership includes: representatives of 14 potato and vegetable farms from all parts of the Central Sands; 3 major potato and vegetable processors (McCain Foods, Del Monte Foods and Seneca Foods); rural communities (Village of Plover); University of Wisconsin Research and Extension Specialists from the Departments of Soils, Horticulture, Entomology, Plant Pathology, Biological Systems Engineering, the Nelson Institute, the Wisconsin Institute for Sustainable Agriculture; and support expertise from WPVGA, Wisconsin Department of Natural Resources, Wisconsin Geological and Natural History Survey, Wisconsin Public Service, USDA-Natural Resources Conservation Service, irrigation and drainage companies and other groups that are called on as needed.

Groundwater monitoring and applied research are key Task Force activities that consolidate and build on the extensive existing knowledge-base related to the hydrogeology of the Central Sands and the potential impacts of water use, drainage, climate and other factors on the groundwater aquifer and associated surface water bodies. They include:

- A network of privately owned irrigation wells in the Central Sands to monitor groundwater fluctuations. The network currently consists of over 500 wells across 4 counties sampled 1-3 times/year. The database is maintained by the WPVGA and may be accessed subject to WPVGA guidelines.
- Co-funded 3 groups of 8 monitoring wells to continuously track fluctuations in groundwater at 6 hour intervals in transects across 3 areas designated as high risk for surface water impacts (Little Plover River, Long Lake, Pleasant Lake) and an additional 5 new monitoring wells in 2015 in the Little Plover watershed to aid in ongoing modeling. Groundwater elevations are posted at (http://wisa.cals.wisc.edu/central_sands_water/csw-monitoring-wells) every 3 weeks.
- Funded a WGNHS study to examine the geophysics and stratigraphy of the Little Plover River Basin (2014-2015) and enhance the DNR-funded modeling project in the area.
- Co-funded WGNHS model of potential impacts of drainage system modifications on water retention and groundwater recharge and study of potential inter-relationships between cropping landscapes, watersheds and groundwater fluctuations in the Central Sands.

Work leading to sustainable groundwater quantity through evaluating and implementing strategies to increase the efficiency of irrigation includes:

- Funded a new, web-based irrigation scheduling program (WISP-2012) by UW Department of Biological Systems Engineering ([ADD link to Publication](#)) and collaborated in statewide training and on farm visits to increase use of WISP-2012 throughout the industry. The program is available to commercial software developers for incorporation into farm management software.
- Collaborated with UWS and funded evaluation of soil moisture sensors, drip irrigation methods to conserve water and manage nutrients and pesticides, deferred and deficit irrigation (withholding water at early growing stages to increase root depth and throughout the growing season). Among the useful results, drip irrigation demonstrated use of 15% less water.
- Conducted an industry-wide assessment of irrigation practices currently used by growers (2014). Assessment completed by 90% of growers representing 185,375 acres. Data will serve as a baseline against which growers can measure future improvement and is currently being used to identify key practices which can be promoted to increase irrigation efficiency as a component of a new WDATCP grant. WPVGA is collaborating with DNR on a new initiative to recognize and reward irrigation expertise.

To support pro-active regional groundwater planning, the task force is developing digital maps of the distribution of crops, natural plant communities, woodland and urban areas and investigating evapotranspiration from crops, natural landscapes and bare soil in relation to climate, irrigation, and fluctuations in groundwater.

As the Governor's Representative, I am pleased to report these examples of support for achievement of Wisconsin's important groundwater management recommendations to the people of Wisconsin, and seek broad input from all concerned parties to determine potential solutions to groundwater issues.